

ABSTRACT

A single mode fiber is provided which is suitable for high-speed, large-capacity optical communication and for optical wiring. The single mode fiber has a first cladding region with a uniform refractive index, a core region with a refractive index higher than that of the first cladding region, and a second cladding region including at least four air hole regions placed in the first cladding region. Optimization can be achieved by making the distance from the center of the core region to the air hole regions equal to 2-4.5 times the core radius, and the air hole radius equal to or greater than 0.2 times the core radius. It is preferable the core radius be 3.2-4.8 μm , the relative index difference of the core region from the first cladding region be 0.3-0.55%.